

CLAIMS

What is claimed is:

- 1 1. A method comprising:
 - 2 accessing a description of a Web service;
 - 3 generating a Web service client proxy based, at least in part, on the accessed
 - 4 description of the Web service;
 - 5 providing a client protocol implementation for the generated Web service client
 - 6 proxy, wherein the provided client protocol implementation is to process a message
 - 7 exchanged between the Web service client proxy and the Web service; and
 - 8 setting a feature of the client protocol implementation to define a behavior of the Web
 - 9 service client without regenerating the Web service client proxy.
- 1 2. The method of claim 1, wherein setting the feature of the client protocol
- 2 implementation comprises:
 - 3 selecting an authentication type for a client authentication protocol implementation to
 - 4 define an authentication type for the message exchanged between the Web service client
 - 5 proxy and the Web service.
- 1 3. The method of claim 2, wherein selecting the authentication type for the client
- 2 authentication protocol implementation comprises:
 - 3 selecting an X.509 certificate authentication type for the client authentication protocol
 - 4 implementation.
- 1 4. The method of claim 1, wherein setting the feature of the client protocol
- 2 implementation comprises:

3 selecting a HyperText Transport Protocol (HTTP) proxy for a client HTTP proxy
4 protocol implementation to define an HTTP proxy for the message exchanged between the
5 Web service client proxy and the Web service.

1 5. The method of claim 1, wherein setting the feature of the client protocol
2 implementation comprises:

3 selecting a wrapper for a client wrapper protocol implementation to define a wrapper
4 for the message exchanged between the Web service client proxy and the Web service.

1 6. The method of claim 5, wherein selecting the wrapper for the client wrapper protocol
2 implementation comprises:

3 selecting a header for a client header protocol implementation to define a header for
4 the message exchanged between the Web service client proxy and the Web service.

1 7. The method of claim 6, wherein selecting the header for the client header protocol
2 implementation comprises:

3 selecting a Simple Object Access Protocol (SOAP) header for a client SOAP header
4 protocol implementation to define a SOAP header for the message exchanged between the
5 Web service client proxy and the Web service.

1 8. The method of claim 1, wherein setting the feature of the client protocol
2 implementation comprises:

3 setting a session feature for a client session protocol implementation to define a
4 session feature for the message exchanged between the Web service client proxy and the
5 Web service.

1 9. The method of claim 8, wherein setting the session feature comprises:

2 restarting a session between the Web service client and the Web service.

1 10. The method of claim 1, wherein accessing the description of a Web service
2 comprises:

3 accessing a Web Service Description Language document describing the Web
4 service.

1 11. The method of claim 1, wherein generating the Web service client proxy comprises:
2 generating a deployable Web service client proxy.

1 12. The method of claim 1, wherein generating the Web service client proxy comprises:
2 generating a standalone Web service client proxy.

1 13. An application server comprising:
2 a network interface to access a description of a Web service; and
3 a processor and logic executable thereon to
4 generate a Web service client proxy based, at least in part, on the accessed
5 description of the Web service;

6 provide a client protocol implementation for the generated Web service client
7 proxy, wherein the provided client protocol implementation is to process a message
8 exchanged between the Web service client proxy and the Web service; and
9 configure a feature of the client protocol implementation to define a behavior
10 of the Web service client without regenerating the Web service client proxy.

1 14. The application server of claim 13, wherein the processor and logic executable
2 thereon to configure a feature of the client protocol implementation comprises:

3 a processor and logic executable thereon to configure an authentication type for a
4 client authentication protocol implementation to define an authentication type for the
5 message exchanged between the Web service client proxy and the Web service.

1 15. The application server of claim 13, wherein the processor and logic executable
2 thereon to configure a feature of the client protocol implementation comprises:
3 a processor and logic executable thereon to configure a HyperText Transport Protocol
4 (HTTP) proxy for a client HTTP proxy protocol implementation to define an HTTP proxy for
5 the message exchanged between the Web service client proxy and the Web service.

1 16. The application server of claim 13, wherein the processor and logic executable
2 thereon to configure a feature of the client protocol implementation comprises:
3 a processor and logic executable thereon to configure a wrapper for a client wrapper
4 protocol implementation to define a wrapper for the message exchanged between the Web
5 service client proxy and the Web service.

1 17. The application server of claim 13, wherein the processor and logic executable
2 thereon to configure a feature of the client protocol implementation comprises:
3 a processor and logic executable thereon to configure a session feature for a client
4 session protocol implementation to define a session feature for the message exchanged
5 between the Web service client proxy and the Web service.

1 18. The application server of claim 13, wherein the application server is a Web
2 application server.

1 19. The application server of claim 18, wherein the application server is a Java 2
2 Enterprise Edition (J2EE) application server.

1 20. A Web service client comprising:
2 a client application to invoke a method of a Web service;
3 a Web service client proxy coupled with the client application to expose the method
4 of the Web service to the client application and exchange a message with the Web service;
5 and
6 a protocol implementation coupled with the Web service proxy to process a message
7 exchanged between the Web service client proxy and the Web service.

1 21. The Web service client of claim 20, wherein the protocol implementation is a security
2 protocol implementation to provide a security service for the message.

1 22. The Web service client of claim 21, wherein the security protocol implementation is
2 an authentication protocol implementation to authenticate the message exchanged between
3 the Web service client proxy and the Web service.

1 23. The Web service client of claim 22, wherein the authentication protocol
2 implementation is to implement a digital certificate protocol for the message.

1 24. The Web service client of claim 21, wherein the security protocol implementation is
2 to implement an encryption protocol implementation to provide an encryption service for the
3 message.

1 25. The Web service client of claim 20, wherein the protocol implementation is a wrapper
2 protocol implementation to provide a wrapper for the message.

1 26. The Web service client of claim 25, wherein the wrapper protocol implementation is a
2 header protocol implementation to process a header for the message.

1 27. The Web service client of claim 26, wherein the header protocol implementation is a
2 Simple Object Access Protocol (SOAP) header implementation to process a SOAP header for
3 the message.

1 28. The Web service client of claim 20, wherein the protocol implementation is a session
2 protocol implementation to process a session between the Web service client proxy and the
3 Web service.

1 29. The Web service client of claim 20, wherein the protocol implementation is a
2 HyperText Transport Protocol (HTTP) proxy protocol implementation to establish an HTTP
3 proxy for the message.

1 30. The Web service client of claim 20, wherein the protocol implementation is a
2 pluggable protocol implementation.

1 31. The Web service client of claim 20, wherein the client application is a Java based
2 client application.

1 32. The Web service client of claim 20, wherein the Web service client proxy comprises:
2 a deployable Web service client proxy.

1 33. The Web service client of claim 20, wherein the Web service client proxy comprises:
2 a standalone Web service client proxy.

1 34. A system comprising:

2 a first node having a Web service to exchange a message with a Web service client;

3 and

4 a second node coupled with the first node, the second node having the Web service

5 client including

6 a client application to invoke a method of the Web service,

7 a Web service client proxy coupled with the client application to expose the

8 method of the Web service to the client application and exchange the message with the Web

9 service, and

10 a protocol implementation coupled with the Web service proxy to process the

11 message exchanged between the Web service client proxy and the Web service.

1 35. The system of claim 34, wherein the protocol implementation is a security protocol

2 implementation.

1 36. The system of claim 34, wherein the protocol implementation is a wrapper protocol

2 implementation to provide a wrapper for the message.

1 37. The system of claim 34, wherein the protocol implementation is a session protocol

2 implementation to process a session between the Web service client and the Web service.

1 38. The system of claim 34, wherein the protocol implementation is an HyperText

2 Transport Protocol (HTTP) protocol implementation to establish an HTTP proxy for the

3 message.

1 39. The system of claim 34, wherein the protocol implementation is a pluggable protocol

2 implementation.

1 40. The system of claim 34, wherein at least one of the first node and the second node is
2 an application server.

1 41. An application server comprising:
2 a client application to invoke a method of a Web service;
3 a Web service client proxy coupled with the client application to expose the method
4 of the Web service to the client application and exchange the message with the Web service;
5 a protocol implementation coupled with the Web service proxy to process the
6 message exchanged between the Web service client proxy and the Web service; and
7 a means for setting a feature of the client protocol implementation to define a
8 behavior of the Web service client without regenerating the Web service client proxy.

1 42. The application server of claim 41, wherein the means for setting a feature of the
2 client protocol implementation to define a behavior of the Web service client without
3 regenerating the Web service client proxy comprises:
4 a means for selecting an authentication type for a client authentication protocol
5 implementation to define an authentication type for the message exchanged between the Web
6 service client proxy and the Web service.

1 43. The application server of claim 41, wherein the means for setting a feature of the
2 client protocol implementation to define a behavior of the Web service client without
3 regenerating the Web service client proxy comprises:
4 a means for selecting a HyperText Transport Protocol (HTTP) proxy for a client
5 HTTP proxy protocol implementation to define an HTTP proxy for the message exchanged
6 between the Web service client proxy and the Web service.

1 44. The application server of claim 41, wherein the means for setting a feature of the
2 client protocol implementation to define a behavior of the Web service client without
3 regenerating the Web service client proxy comprises:

4 a means for selecting a wrapper for a client wrapper protocol implementation to
5 define a wrapper for the message exchanged between the Web service client proxy and the
6 Web service.

1 45. An article of manufacture comprising:

2 an electronically accessible medium providing instructions that, when executed by an
3 apparatus, cause the apparatus to

4 access a description of a Web service;

5 generate a Web service client proxy based, at least in part, on the accessed description
6 of the Web service;

7 provide a client protocol implementation for the generated Web service client proxy,
8 wherein the provided client protocol implementation is to process a message exchanged
9 between the Web service client proxy and the Web service; and

10 configure a feature of the client protocol implementation to define a behavior of the
11 Web service client without regenerating the Web service client proxy.

1 46. The article of manufacture of claim 45, wherein the instructions that, when executed
2 by the apparatus, cause the apparatus to configure a feature of the client protocol
3 implementation include instructions that cause the apparatus to

4 configure an authentication type for a client authentication protocol implementation
5 to define an authentication type for the message.

1 47. The article of manufacture of claim 45, wherein the instructions that, when executed
2 by the apparatus, cause the apparatus to configure a feature of the client protocol
3 implementation include instructions that cause the apparatus to
4 configure a HyperText Transport Protocol (HTTP) proxy for a client HTTP proxy
5 protocol implementation to define an HTTP proxy for the message.

1 48. The article of manufacture of claim 45, wherein the instructions that, when executed
2 by the apparatus, cause the apparatus to configure a feature of the client protocol
3 implementation include instructions that cause the apparatus to
4 configure a wrapper type for a client wrapper protocol implementation to define a
5 wrapper type for the message.